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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,173	08/07/2006	Eran Fine	30063	1754
7590 07/25/2008				
Martin Moynihan Anthony Castorina Suite 207 2001 Jefferson Davis Highway Arlington, VA 22202			EXAMINER ROJAS, OMAR R	
			ART UNIT 2874	PAPER NUMBER
			MAIL DATE 07/25/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/538,173

Applicant(s)

FINE, ERAN

Examiner

OMAR ROJAS

Art Unit

2874

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 90-111, 114-121, 123, 125 and 126 is/are pending in the application.
- 4a) Of the above claim(s) 121, 125 and 126 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 90-111, 114-120 and 123 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/26/2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Final Drawing Review (PTO-848)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/13/2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 90-111, 114-120, and 123 in the reply filed on 04/17/2008 is acknowledged.

Response to Amendment

2. With regards to the amendment filed on 12/26/2007, all the requested changes to the claims and specification have been entered. Claim(s) 90-111, 114-121, 123, 125, and 126 are pending. Claims 121, 125, and 126 have been withdrawn from consideration.

Response to Arguments

3. Applicant's arguments with respect to claims 90-111, 114-120, and 123 have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

4. The prior art documents submitted by applicant(s) in the Information Disclosure Statement(s) ("IDS") filed on 11/13/2007 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Drawings

5. The drawings were received on 12/26/2007. These drawings are acceptable. In view of the drawings and remarks filed 12/26/2007 concerning Figures 12 and 13, the previous objection to the drawings is hereby withdrawn.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 90-105, 107-111, 114-120, and 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Publication No. US 2004/0196648 A1 to Franklin et al. ("Franklin") in view of Patent No. US 6,528,755 B2 to Grewell et al. ("Grewell").**

In re claims 90, 94, 95, 102, and 123, Franklin discloses an optical waveguide capable of propagating and emitting light comprising:

a transparent multilayered polymeric material **12/14/16** shaped as a light guide **40** having a plurality of diffuser particles **20** distributed in said material in an increasing concentration such that a portion of the light is scattered by said particles **20** and emitted through a side surface of said light guide to inherently provide a light gradient emanating from said side surface. *See* paragraphs [052]-[053] of Franklin for further details. Figure 4 of Franklin is reproduced below.

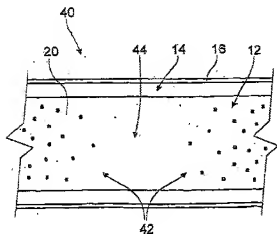


FIG. 2

In re claim 103, the core layer 12 in contact with clad layer 14 must inherently have a larger refractive index than clad layer 14 in order to guide the light.

In re claim 108, the light guide of Franklin emits different amounts of light from its surface longitudinally and, thus, forms a predetermined pattern of light.

In re claims 109-110, at least some of the particles 20 disclosed by Franklin are inherently capable of performing in the manner specified by these claims because they appear to have the same physical structure as both the claimed additional component and diffractive optical element.

Thus, Franklin only differs from claims 90, 94, 95, 102, 103, 108-110, and 123 in that he does not disclose that his light guide 40 is flexible and shaped as a sheet. Grewell, on the other hand, discloses a flexible light guide 14 that is made of a flexible sheet of rubber, silicone rubber, or thermoplastic. *See* Grewell at column 3, lines 19-31. The light guide of Franklin could have

also been fabricated from the sheet material(s) of Grewell in order to provide Franklin's light guide with additional flexibility, thereby obtaining the invention of claims 90, 94, 95, 102, 103, 108-110, and 123. Therefore, it would have been obvious to one of ordinary skill at the time of the claimed invention to obtain the invention specified by claims 90, 94, 95, 102, 103, 108-110, and 123 in view of Franklin combined with Grewell.

In re claims 91-101, the rubber and/or silicone rubber disclosed by Grewell at column 3, lines 10-52 inherently possess all the properties specified by these claims because they include the same waveguide materials described in applicant's own specification.

In re claims 104 and 105, since the proposed combination of Franklin and Grewell has all the structural limitations required by these claims, it is presumed that it is inherently capable of performing in the manner specified by claims 104 and 105. Therefore, claims 104 and 105 are unpatentable for the same reasons mentioned with respect claims 90, 94, 95, 102, 103, 108-110, and 123.

In re claim 107, Grewell further teaches, see column 3, lines 56-60, that his light guide **14** may consist of multiple layers of material in order to optimize its light carrying properties. It is well-known in the waveguide art to use multiple cladding layers to surround an optical waveguide core. Such cladding layers typically have lower refractive indices than the core layer in order to confine light within the core layer. As suggested by Grewell, Franklin's light guide could have further been modified to have additional cladding or third layer, said third layer having a lower

refractive index than Franklin's core layer. Thus, it would have also been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 107 in view of Franklin combined with Grewell, and further in view of common knowledge in the optical waveguide art concerning multiple cladding layers.

In re claim 111, Franklin in view of Grewell further differs from these claims in that Franklin does not expressly teach also including his diffuser particles **20** within the claimed third layer. However, as discussed with respect to claim 107, providing an additional cladding or third layer to Franklin's device would have been obvious to obtain better confinement of light within the core layer. It would have also been obvious to include at least some of Grewell's diffuser particles **20** within this third layer for the purpose of obtaining more control over, or an increase in, the amount of scattered light. Therefore, it would have been obvious to one of ordinary skill at the time of the claimed invention to obtain the invention specified by claim 111 in view of Franklin combined with Grewell.

In re claims 114-120, since the proposed combination of Franklin and Grewell has all the structural limitations required by these claims, it is presumed that it would inherently be capable of performing in the claimed manner and/or exhibiting the functions specified by these claims. Therefore, claims 114-120 are considered unpatentable for the same reasons mentioned with respect claim 111.

8. Claim 106 is rejected under 35 U.S.C. 103(a) as being unpatentable over Franklin in view of Grewell as applied to claim 103 above, and further in view of Patent No. US 6,278,106 B1 to Muto et al. ("Muto"). The Muto patent was applied in a prior Office action.

In re claim 106, Franklin in view of Grewell only differs in that Grewell teaches an optical core layer that comprises rubber, silicone rubber, or thermoplastic, instead of polyisoprene. Muto, on the other hand, teaches that polyisoprene can be used as an optical waveguide core. *See* Muto at column 6, lines 31-52. The prior art references teach all of the claimed elements. The difference between Franklin in view of Grewell and the claimed invention is using rubber, silicone rubber, or thermoplastic for the core layer rather than polyisoprene. One of ordinary skill in the art would have recognized that rubber, silicone rubber, thermoplastic, and polyisoprene are known equivalents for providing waveguide cores within the optical waveguide art. It would have been obvious to one of ordinary skill in the art to substitute one known element (rubber, silicone rubber, or thermoplastic) for another known equivalent element (polyisoprene) resulting in the predictable result of forming an optical waveguide core. *KSR v. Teleflex*, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385 (2007). Therefore, it would have been obvious to one of ordinary skill at the time of the claimed invention to obtain the invention specified by claim 106 in view of Franklin combined with Grewell, and further in view of Muto.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (9:00PM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Omar Rojas/

Patent Examiner, Art Unit 2874

/Rodney Bovernick/

Supervisory Patent Examiner

Art Unit 2874

or

July 26, 2008